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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,230	12/19/2001	Robert P. Carlstedt	60,130-1027/01MRA0149	7385

26096 7590 06/02/2004  
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SUITE 350  
BIRMINGHAM, MI 48009

EXAMINER

SPISICH, GEORGE D

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/025,230	Applicant(s) CARLSTEDT ET AL.	
	Examiner George D. Spisich	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☒ Claim(s) 13-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldberg et al. (USPN 4,371,191) in view of Mackle et al. (USPN 6,347,802).

Goldberg et al. (as shown in Figure 12) disclose a suspension assembly and the method of adjusting the vehicle suspension assembly comprising the steps of providing a mechanical input from a steering wheel to spaced apart wheels (this arrangement is shown in Figure 6) and turning the wheels in response to the mechanical input, detecting vehicle ride conditions, one of which a steering wheel position sensor (S2) and manipulating first, second and third actuators in response to the vehicle ride conditions and adjusting the attitude of the wheels with the actuators to a desired position. In Figure 12, there is a top view showing the first and second actuators. In col. 15, lines 63-68, there is disclosed that the lower control arm arrangement may also be actuators, which would be the third (and fourth) actuator.

Goldberg et al. disclose a sensor (shown in Figure 6) detecting ride conditions and a controller connected to the sensor and the actuators commanding the actuators to adjust the caster, camber, toe and/or track in response to the vehicle ride conditions to achieve a desired position.

However, Goldberg et al. does not disclose the vehicle condition sensors to specifically sense yaw or include a braking sensor. Goldberg et al. does disclose the sensing of the wheel heights to detect the dynamic forces and therefore the relation of the vehicle body during driving. It could then be considered that these sensors detect vehicle yaw to be used to adjust the wheel geometry accordingly.

Mackle et al. (USPN 6,347,802) disclose vehicle suspension arrangement having an actuator to adjust the wheel geometry based on sensed vehicle conditions. Mackle et al. disclose the vehicle conditions to include yaw rate (in col. 2, line 48) and a brake signal (in col. 3, line 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Goldberg et al. to further monitor and sense the vehicle yaw rate, and the vehicle anti-lock brake system as taught by Mackle et al. and interrelate this vehicle ride condition with the adjustment of the camber, caster, toe and/or track so as to achieve enhanced dynamic vehicle suspension performance.

***Response to Arguments***

With respect to Applicant's argument that one of ordinary skill in art would not modify Goldberg in view of Mackle since it would be unnecessary to do so since Goldberg does not need a yaw sensor. Examiner disagrees with the argument and maintains the rejection. If Applicant believes that it is unnecessary to further modify the suspension of Goldberg by monitoring the yaw rate of the vehicle, then Applicant must feel this is a redundant motion and would mean that Goldberg must then be measuring yaw. Assuming that Applicant has argued that yaw and braking signals are simply not sensed and also not needed in Goldberg, Examiner disagrees. Mackle clearly states the specifics of sensing these vehicle conditions and it would be proper to modify the suspension of Goldberg to "enhance the dynamic performance of the vehicle suspension".

With respect to Applicant's argument that Goldberg does not disclose sensors that "could be considered to detect vehicle yaw". Although Examiner is not relying on this interpretation in the current rejection in this action, Examiner simply meant that the vehicle conditions sensed in Goldberg that include wheel height, steering wheel position etc. would be interrelated with the inclination of the vehicle in the broad sense and could therefore be considered to broadly sense yaw.

***Allowable Subject Matter***

Claims 1-11 are allowed.

Prior Art does not show an adjustable vehicle suspension assembly having first and second actuator supported on a control arm and converging to a connection of the steering knuckle.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Spisich whose telephone number is (703)


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305-6495. The examiner can normally be reached on Monday to Friday 9:30-7:00 except alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (703) 308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gds   
May 20, 2004

 5/27/04  
PAUL N. DICKSON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600